

Claims 1-10, 15 and 17 remain in the application. Claims 1-10 have been withdrawn from consideration.

In item 3 on pages 2-3 of the above-mentioned Office action, claims 15 and 17 have been rejected as being unpatentable over Yamagishi et al. (Japanese Patent Application JP 6-291239) in view of Komata et al. (Japanese Patent Application JP 2-15897) and Bacon et al. (US Pat. No. 5,234,153) under 35 U.S.C. § 103(a).

As will be explained below, it is believed that the claims were patentable over the cited art in their original form and the claims have, therefore, not been amended to overcome the references.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claim 15 calls for, inter alia:

said solder containing a gold-tin compound (AuSn) with a hypereutectic Sn concentration and forming a layer having a thickness of from about 1 μm to about 2 μm .

Yamagishi et al. disclose a gold-tin soldered joint between the housing 5 of a chip 4 and a substrate 1 (see Fig. 1(c)). Komata et al. disclose a hypereutectic gold-tin-alloy with a tin content of 37% by weight (see page 585, left column,

middle). Bacon et al. disclose a gold-tin solder layer with a layer thickness of about $5\mu\text{m}$ (see column 6, lines 44-46).

None of the references discloses the direct joint of a semiconductor chip with a substrate through a hypereutectic gold-tin-alloy having a layer thickness of about $1\text{-}2\mu\text{m}$. Therefore, the combination of references cannot show that feature.

The invention of the instant application for the first time enables the direct attachment of a chip on a substrate through a thin gold-tin solder joint. The layer thickness of the gold-tin solder layer is at least 2.5 times less than the thickness disclosed in Bacon et al. In Yamagishi et al., there is not any solder layer between the semiconductor chip 4 and the substrate 1 or between the semiconductor chip 4 and the housing 5.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claim 15. Claim 15 is, therefore, believed to be patentable over the art and since claim 17 is dependent on claim 15, it is believed to be patentable as well.

In item 4 on pages 3-4 of the above-mentioned Office action, claims 15 and 17 have been rejected as being unpatentable over Yamagishi et al. in view of Ivey et al. (US Pat. No. 6,245,208) and Bacon et al. under 35 U.S.C. § 103(a).

Applicant respectfully believes that the reference Ivey et al. is not prior art with respect to the instant application. The instant application is a continuation of copending international application PCT/DE98/01737, filed June 24, 1998. Pursuant to 35 U.S.C. § 363, the instant application has a filing date of June 24, 1998, because the instant application designated the United States. This date is prior to Ivey et al.'s U.S. filing date. Accordingly, the reference Ivey et al. is unavailable as prior art.

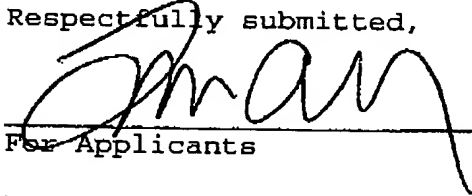
Therefore, applicant respectfully submits that the rejection in item 4 on pages 3-4 of the Office action under Section 103 is moot.

In view of the foregoing, reconsideration and allowance of claims 15 and 17 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate a telephone call so that, if possible, patentable language can be worked out.

Please charge any fees which might be due with respect to
Sections 1.16 and 1.17 to the Deposit Account of Lerner and
Greenberg, P.A., No. 12-1099.

Respectfully submitted,



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For Applicants

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